No. 647,645. Patented Apr. 17, 1900.

F. M. BUTE.

DOOR SPRING.

(Application filed Jan. 23, 1900.)

(No Model.)

Fig. 1.

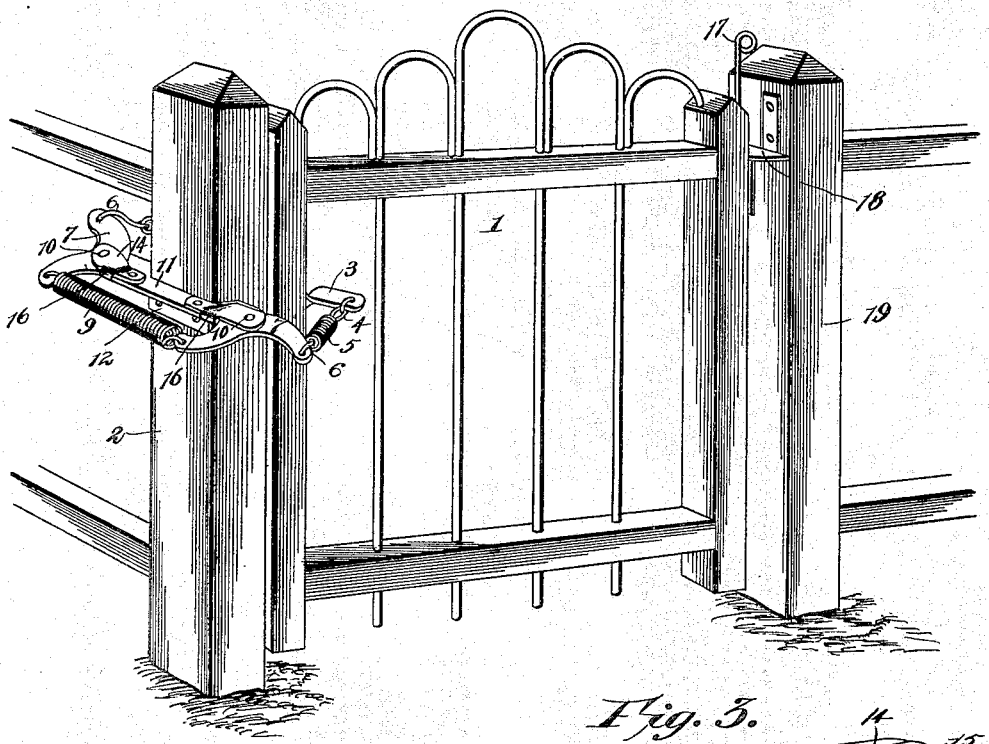


Fig. 3.

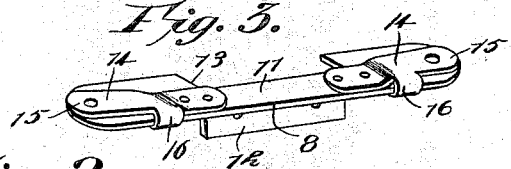
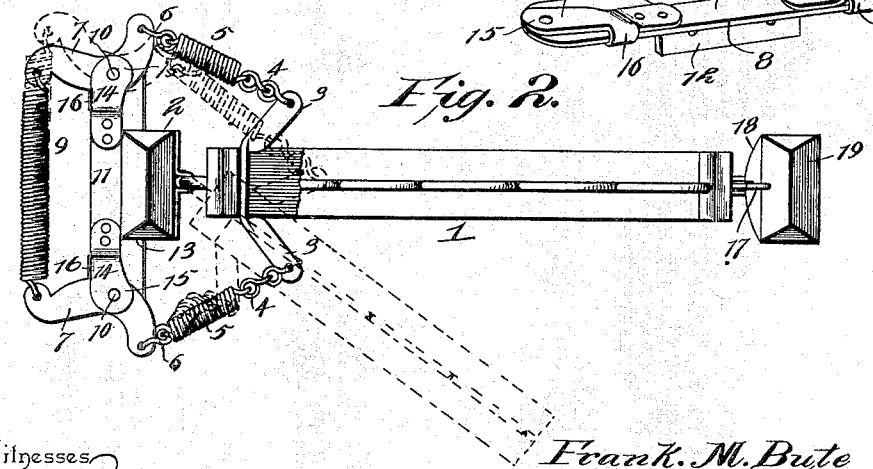


Fig. 2.



Witnesses
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J. F. J. Riley

Frank. M. Bute Inventor.

By his Attorneys,

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UNITED STATES PATENT OFFICE.

FRANK M. BUTE, OF IVESTER, IOWA.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 647,645, dated April 17, 1900.

Application filed January 23, 1900. Serial No. 2,494. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. BUTE, a citizen of the United States, residing at Ivester, in the county of Grundy and State of Iowa, have invented a new and useful Improvement in Door-Springs, of which the following is a specification.

The invention relates to improvements in door-springs.

The object of the present invention is to improve the construction of door-springs and to provide a simple, inexpensive, and efficient device designed to be applied to an ordinary swinging gate and adapted to permit the same to be opened in either direction and capable of automatically closing and locking the same.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a gate provided with a device constructed in accordance with this invention. Fig. 2 is a plan view of the same, partly broken away, to illustrate the manner of mounting the arms on the gate. Fig 3 is a detail perspective view of the bracket which forms the fulcrum or support for the levers.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a swinging gate hinged to a post 2 by any suitable means and provided at its inner or hinged end with a pair of laterally-extending forwardly-diverging arms 3, preferably formed integral with each other and consisting of a plate or bar centrally secured to the inner face of the inner end bar of the gate. The central portion of the plate or bar fits flat against the face of the end bar and is arranged in a vertical plane, and the end portions, which form the arms 3, are given quarter-bends to arrange them in a horizontal plane. The outer ends of the arms 3 are provided with perforations to receive links of short chains 4, which connect the arms 3 with the adjacent end of a pair of rearwardly-diverging springs 5. The springs 5, which are coiled, as clearly illustrated in Figs. 1 and 2 of the drawings, are connected at their rear ends by links 6 with the front arms of levers 7, and the latter, which are substantially V-shaped or of bell-crank form, are fulcrumed at their angles on a bracket 8 at the opposite sides of the hinge-post 2. The bell-crank levers have their rear arms connected by a coiled spring 9, extending across the space between the levers and provided at its ends with loops, which are linked into perforations of the same.

The bell-crank levers are fulcrumed on pivots 10 at the ends of the bracket 8, which is provided with a horizontal plate or supporting portion 11, having a depending flange 12 located at its center and secured to the rear face of the hinge-post. The plate has its inner edge cut at opposite sides of the center, and the cut portion is bent downward to form a flange 12. This also forms a recess 13 for the reception of the hinged post, the side walls of the recess fitting against the side faces of the post 2, as clearly illustrated in Fig. 1 of the drawings. The bracket is provided at its ends with supplemental plates 14, having perforated outer portions, forming ears 15, which are spaced from the upper face of the horizontal plate or portion of the bracket and support the pivots of the bell-crank levers. The inner ends of the plates 14 are riveted or otherwise secured to the upper face of the body of the bracket, and the outer portions of the supplemental plates are bent adjacent to the rivets or other suitable fastening devices and are provided with arms or lugs 16, extending downward and inward and engaging the lower face of the body portion of the bracket. These arms support the outer upwardly-off-set portions of the supplemental plates and also form stops, which are engaged by the rearwardly-extending arms of the bell-crank levers.

The gate is provided at its front or free end with a latch 17, adapted to engage a keeper 18 of the latch-post 19; but instead of employing the latch shown in the accompanying drawings any other suitable means may be employed for locking the gate in its closed position.

When the gate is opened in either direction, the rear spring 9 and one of the side springs 5 are distended and will operate to close the gate automatically as soon as the

same is released. Should the gate swing beyond the latch-post, such movement will be retarded by the other side spring, and both side springs and the rear spring will then operate to cushion the gate and bring it to its closed position.

It will be seen that the device is exceedingly simple and inexpensive in construction, that it is positive, reliable, and automatic in operation, and that it is capable of positively closing a gate after the same has been opened. It will also be apparent that the device is adapted for gates opening in either direction and that should a gate swing beyond its closed position the device will return it to the same and cushion such closing.

What is claimed is—

1. In a device of the class described, the combination with a support, and a swinging gate or door, of levers fulcrumed on the support and having arms extending forward and rearward from the same, springs located at opposite sides of the gate or door and connected with the same and with the forwardly-extending arms of the levers, and a spring connected with the rearwardly-disposed arms of the levers, substantially as described.

2. In a device of the class described, the combination with a swinging gate or door, provided with a pair of laterally-disposed arms, of a support, a pair of bell-crank levers fulcrumed on the support and located at opposite sides of the gate or door, springs connecting the arms of the gate or door with the adjacent portions of the levers, and a transverse spring connecting the rear portions of the levers, substantially as described.

3. In a device of the class described, the combination with a swinging gate or door, of a bracket provided with supplemental plates having arms forming shoulders, levers fulcrumed on the bracket between the same and the supplemental plates, springs located at opposite sides of the gate and connecting the same with the levers, and a rear spring connected with the levers and holding the same in engagement with the said shoulders, substantially as described.

4. In a device of the class described, the combination with a swinging gate or door, of a bracket consisting of a plate or body portion provided with a recess and having a flange depending from the inner wall thereof, and supplemental plates having outer portions spaced from the body portion of the bracket and provided with shoulders, levers fulcrumed between their ends on the bracket between the body portion and the supplemental plate, a rear spring connected with the rear ends of the levers, and side springs connected with the front ends of the levers and with the gate or door, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FRANK M. BUTE.

Witnesses:
A. H. MILLER,
E. E. SWAB.